

## REMARKS

Claims 29-62 are pending in the present application. Claims 47-56 and 59-62 were previously withdrawn by restriction. Reexamination of the application and reconsideration of the rejections and objections are respectfully requested in view of the following remarks, which follow the order set forth in the Office Action.

### *Rejections under 35 U.S.C. § 103*

#### **I. Serpico and Feng**

Claims 29-46 and 58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0118887 to Serpico et al. ("Serpico") in view of Feng et al., "Synthesis of polystyrene-silica hybrid mesoporous materials via the nonsurfactant-templated sol-gel process" J. Mater. Chem, 2000, 10, 2490-2494 ("Feng"), as evidenced by U.S. Patent Publication No. 2002/0028372 to Ohlsen et al. ("Ohlsen"). Applicants respectfully traverse the rejection.

Applicants submit that claims 29-46 and 58 are patentable because Serpico and Feng do not teach, alone or in combination, a conductive organic-inorganic hybrid material comprising a mineral phase in which walls define pores forming a structured mesoporous network with open porosity, which is required by claim 29.

Claim 29 is drawn to a conductive organic-inorganic hybrid material comprising a mineral phase in which walls define pores forming a structured mesoporous network with open porosity. The material further comprises an organic oligomer or polymer integrated in the walls and bonded covalently to the mineral phase, and optionally another phase inside the pores, composed of at least one surface active agent. At least one of the mineral phase and the organic oligomer or polymer have conductive and/or hydrophilic functions. The organic oligomer or polymer and the at least one surface active agent are different from one another in terms of their structure and their effect.

Serpico teaches a composite membrane comprising a polymer and a reinforcing substrate bonded thereto. *See*, Abstract. Serpico also teaches using organic-inorganic hybrid composites for potentially increasing the mechanical integrity of the membrane. *See*, ¶[0045]. Serpico teaches that chemical networks of the inorganic materials can be prepared within the structure of the polymer. *Id*. Further, a co-continuous network can be formed in which the base polymer is incorporated into the inorganic phase. *See, Id*. Feng teaches an organic-inorganic hybrid mesoporous membrane comprising a mesoporous silica mineral

phase with covalently bonded polymer chains. *See*, Abstract. Feng also teaches that there is no clearly identifiable structural order or packing of the mesoporous channels in the mesoporous sol-gel silica. *See*, p. 2492, c. 2.

Applicants submit that combining the teachings and suggestions of Serpico and Feng would not yield a material with a structured mesoporous network, as required by claim 29. As stated above, Serpico teaches a material having a co-continuous network of polymer and inorganic phase. In fact, the Office acknowledges that Serpico does not disclose wherein the mineral phase comprises walls which define pores forming a structured mesoporous network. *See*, Office Action, p. 3, ¶2. Feng does not overcome this deficiency of Serpico because Feng does not teach or suggest a structured mesoporous network. As described in the instant application, a structured mesoporous network exhibits an organized spatial layout of mesopores. *See*, p. 5, ll. 11-14. Feng's teaching of a material that lacks a clearly identifiable structural order or packing does not reasonably provide a teaching or suggestion of a structured mesoporous network. Accordingly, Feng does not teach or suggest a structured mesoporous network, which is required by claim 29.

Based on the foregoing, Applicants submit that claims 29-46 and 58 are patentable over the combination of Serpico and Feng. Accordingly, Applicants respectfully request reconsideration and withdrawal of the instant rejection.

## **II. Serpico, Feng and Wu**

Claim 57 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Serpico in view of Feng, as evidenced by Ohlsen and further in view of U.S. Patent No. 6,465,052 to Wu ("Wu"). Applicants respectfully traverse the rejection.

Applicants submit that Wu does not provide any teaching or suggestion that overcomes the deficiencies of the combination of Serpico and Feng discussed above because Wu does not teach or suggest all of the limitations of claim 29, such as a structured mesoporous network. Accordingly, Applicants respectfully request reconsideration and withdrawal of the instant rejection.

For the foregoing reasons, claims 29-46, 57, and 58 are considered to be allowable. A Notice to this effect is respectfully requested. If any questions remain, the Examiner is invited to contact the undersigned at the number given below.

**The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 23-1925.**

Respectfully submitted,

BRINKS HOFER GILSON & LIONE

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